the magazine for defense and intelligence transformation
JULY/AUGUST 2006
DEFENSE SYSTEMS
PostNewsweek Tech Media
DefenseSystems.com

SEE THE FOREST AND THE TREES

Project overruns, GAO concerns and an OMB mandate lead Defense agencies to take a fresh look at their use of earned value management.

BY HEATHER B. HAYES

No one in the government knows more about or has more experience using earned value management than the Defense Department. DOD first began using EVM, a disciplined project management methodology, in the 1960s to help identify risks and variances in the schedules and budgets of major projects.

But as the years have gone by, some DOD contractors and agencies have become fairly lax in their commitment to and application of EVM, letting less experienced people take the helm on EVM projects, not keeping tools and documentation processes up to date, and not devoting enough resources to it.

"There are pockets of goodness out there, of course, but there is also this huge void of dedication, experience and passion with regard to EVM," says Dave Kester, deputy of the Earned Value Management Division for the Naval Air Systems Command. "And we're seeing the result of that now with schedule slips and cost overruns. The facts are out there saying that EVM is just not getting done."

TOP-LEVEL QUESTIONS

A Government Accountability Office report last year bears out Kester's conclusion. The congressional watchdog studied the performance of 54 DOD acquisition programs worth $800 billion jointly and found that 26 were exceeding costs by as much as 45 percent and had schedules slipping 20 percent on average.

Moreover, a second GAO report admonished DOD for getting around EVM safeguards by comparing latest unit cost estimates against the most recent congressionally approved baselines—rather than the original baselines. The report noted that the practice of rebaselining "shortens the period of performance and resets the measurement of cost growth to zero." The result is a false sense of cost and schedule problems. As an example, DOD reported in the 2003 Selected Acquisition Report that the F/A-22 Raptor program's unit cost had decreased by .33 percent in the previous four months; overall, however, the unit cost for the program had increased by 72 percent over 143 months.

Such findings are leading Defense officials to recognize the need for a renewed commitment to EVM basics.

RIGHT TOOL FOR THE JOB

What's changed over 40 years of Earned Value Management use at the Defense Department? The availability of effective, easy-to-use automated tools that analyze EVM data. EVM engines, as they're often called, marry the output of cost and scheduling programs and address specific challenges to EVM.

When used correctly, these tools can provide organizations with plenty of benefits. Automated EVM tools are faster than manual processing, of course, says Ruthanne Schulte, product manager of EVM for Deltek Systems, which has an EVM tool called Cobra. But they're also easier to maintain and more accurate than using a spreadsheet to perform necessary calculations, and they support batch processing.

There are a number of products on the market, but buyers do need to be aware of quality differences, says Bill Mathis, senior director of government solutions for Price Systems. A key characteristic in an effective EVM tool is the ability to guard the performance measurement baseline against unwarranted changes.

"Some people who practice EVM will want to erase variances against the plan because they're embarrassed by the variances or they don't want to deal with the consequences of poor planning," Mathis says. "They would rather doctor a baseline so that the variance vanishes."

A top-notch EVM system will prevent that—unless it is presented with a reasonable or acceptable justification. And even then, the program will require that both the change and the justification be recorded. Later, when a log of the changes is produced, it will not only detail when they were made and why, but what impact they had on the project.

"That's essential," Mathis states. "When you get programs that run to either a successful or not so successful conclusion, having those records is really necessary so you can learn lessons and make sure that the same mistakes aren't made over and over again in the future."

—Heather B. Hayes

The assistant secretary of the Navy, for example, is creating an EVM Center of Excellence and pulling in NAVAIR's EVM Division to help provide training and assistance to other Navy and Defense agencies. The Defense Contract Management Agency, which is responsible for certifying EVM systems, is also reorganizing to re-emphasize the need for EVM practices and is launching its own EVM Center of Excellence with 15 EVM experts available for consultation to organizations throughout DOD.

Moreover, a recent directive from the Office of Management and Budget that requires all agencies to use EVM on IT projects is putting even more focus on the methodology. Civilian agencies, including the Homeland Security Department (DHS), are now looking to Defense agencies for guidance on getting started.

STAY FOCUSED

"The biggest difficulty with doing EVM successfully is doing it properly, and to a large degree, that means doing it with the right amount of vigilance," says Tom Bowman, director of the EVM practice at Robbins-Gioia LLC, a project management consulting firm in Alexandria, Va. "When you have people's attention, they tend to do things right, but once the focus is off of it, then people very quickly find other priorities that take their attention and they get cavalier. They stop giving voice to EVM principles, they stop asking questions and pretty soon you have a very weak discipline. That has been and always will be a danger for DOD."

So how can senior officials keep their personnel and contractors enthusiastic about EVM? They've got to face the unique challenges inherent in maintaining any process over time and recognize that, done properly, EVM can provide real benefits to the mission and the warfighter.

As with other management practices, the cheerleading needs to start at the top, says Kester. "The commanders have got to buy into it, and I'm not talking about just acknowledging it," he says. "They've got to make a commitment to it by using it, talking about it and holding people accountable for their performance. Without that, it simply will not get used."

Strong top-down support is critical as well to obtain the kind of resources needed to stand up an EVM system. Implementation is the most expensive, time-consuming and frustrating aspect of the methodology because there are 32 criteria—including planning, scheduling, baselining, analysis and reporting—required for compliance with ANSI Standard 748 on EVM.

"Getting started on an EVM system is extremely challenging, and if you're only going to give personnel five or six hours a week to work on it, those implementations are going to fail," says Ruthanne Schulte, program manager for EVM for Deltek Systems Inc. The Herndon, Va., company provides automated EVM tools and consulting services to DOD and DHS agencies. "But if you allow those same personnel the dedicated time they need to get the system going, then you've got a really good chance at succeeding because once it's in place, it's just a new way to manage."

CREATE INCENTIVES

Kester also notes that because of the OMB mandate, Defense agencies will now have to compete with civilian agencies for personnel with strong experience and expertise in EVM. For this reason, he has been encouraging senior officials to focus resources on developing new training programs and strengthening existing ones and to develop career fields in EVM systems as an incentive for high-quality personnel to get involved.

Beyond top-down support, selecting the right people for the job is the most critical aspect involved in performing EVM effectively, says Bowman, mainly because from the time a contract is awarded, agencies have just six months to get their EVM process up and

NEW CHALLENGES, SAME SOLUTIONS

EVM experts say that no matter what a project involves, tried-and-true best practices still apply.

- **Get a strong baseline and don't lose sight of it.** If you don't have faith in the baseline that's used for EVM reporting, the whole effort is a waste of time, says Bill Mathis, senior director of government solutions for Price Systems LLC of Mount Laurel, N.J. "Everything that's reported from an EVM system, all of its mechanics and procedures are fundamentally dependent on the cost credibility of the baseline going into a program," says Mathis, whose company provides EVM consulting to NAVAIR and other Defense agencies. "So you really need to have a means whereby you can verify, validate and have faith in the equality of that baseline before you start reporting against it."
- **Use different practices for different types of contracts.** The process speed, number of personnel needed and level of detail involved will vary for an IT project with a two-year lifecycle versus a weapons systems being developed over 15 years, for example. The details are also different for a cost-plus-award-fee contract versus a time and material contract.
- **Prepare for change.** Projects often take on a life of their own and those involved can't help but tamper with the scope, whether it's making a weapons system more powerful or incorporating just-released technologies into an IT project, notes Joel Koppelman, CEO of Primavera Systems Inc., an EVM consulting firm in ala Cynwyd, Pa. EVM managers on IT projects will need to be able to manage changes effectively by first gauging and then fully planning and compensating for the impact on the overall program.
- **Stay on top of your contractors.** Defense contractors may have a lot of experience using EVM, but that doesn't mean they're necessarily going to do it effectively or prudently. Agency personnel can encourage better performance by making sure that the original baseline is credible and that the contractor reports against that original baseline, having an effective reviewing mechanism built into the contract and continuing to monitor progress and calculations closely no matter how much time goes by.
- **Don't wait to fix a problem.** A DOD study of 400 projects undertaken since 1977 found that managers accurately predicted whether their projects would come out on time and on budget when the project was only 15 percent complete. EVM is designed to be an early warning system, say Koppelman, so if a project shows variances early on, "you've got to figure out why you're having a variance and then you've got to take corrective action immediately, or you're not going to recover."

running and perform their first integrated baseline review.

"The head of an EVM project not only has to have the right experience but they've got to know how to flexibly tailor processes and products to the needs of the new contract or program," Bowman says. "If you don't have that kind of expertise, you really are in for an uphill battle."

Ultimately, it's up to management to make EVM pay off, Kester says. Officials need to realize that the effort is worth their time, he says. "By getting our financial house in order, by finding good EVM managers and putting them in place and making really hard decisions to find and fix variances, we'll get equipment and systems at a more reasonable price, and we'll get them to the warfighter sooner. That's what EVM can and should do for us." DS